#### STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

## APPLICATION OF MESQUITE SWD, INC. TO RE-OPEN CASE NO. 14979 TO AMEND ORDER NO. R-13735 TO ALLOW A NEW WELL AND NEW WELL LOCATION FOR A SALT WATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO.

Case No. 14979 (Re-opened)

#### VERIFIED STATEMENT OF KAY HAVENOR

COUNTY OF CHAVES ) ) ss. STATE OF NEW MEXICO )

Kay Havenor, being duly sworn upon his oath, deposes and states:

1. I am over the age of 18, and have personal knowledge of the matters stated herein.

2. I am a geologist for Mesquite SWD, Inc. ("Mesquite"), and I am familiar with the geological matters involved in this case

3. I have been previously qualified as an expert petroleum geologist by the Division.

4. Division Order No. R-13735 approved injection into the Paduca Fed. SWD Well No. 3 for disposal of produced water into the Bell Canyon and Cherry Canyon members of the Delaware formation at depths of 4870-7250 feet subsurface. The well was located 300 feet from the north line and 1760 feet from the west line of Section 23, Township 25 South, Range 32 East, NMPM.

5. The Paduca Fed. SWD Well No. 3 (API No. 30-025-42253) was spudded, and surface casing was set and comented. When the drilling rig arrived, it could not get back into the casing. The Burcau of Land Management (the "BLM") told Mesquite to skid the rig and re-drill the well. The rig was skidded to a location 310 feet from the north line and 1760 feet from the west line of Section 23, Township 25 South, Range 32 East, NMPM, and the new well, the Paduca Fed. SWD Well No. 3Y (API No. 30-025-42258) was drilled but has not yet been completed.

6. The BLM approved drilling the 3Y well with the provision that injection could not commence until Mesquite obtained approval to inject from the Division.

Oil Conservation Division Case No. \_\_\_\_\_ 14919 Exhibit No. \_\_\_\_ 7. Attached hereto are the APD for the 3Y well (Attachment A), Sundry Notice for the 3Y well for the new location (Attachment B), and Sundry Notice for the 3Y well approved by the BLM (Attachment C).

8. Mesquite requests that the new location and 3Y well be approved for injection.

Kay Havenor

#### **VERIFICATION**

) ) ss.

)

STATE OF NEW MEXICO COUNTY OF CHAVES

Kay Havenor, being duly sworn upon his oath, deposes and states that: He is a geologist employed by Mesquite SWD, Inc. as a contract geologist; he is authorized to make this verification on its behalf; he has read the foregoing statement, and knows the contents thereof; and the same is true and correct to the best of his knowledge, information, and belief.

Kay Havenor

SUBSCRIBED AND SWORN TO before me this 3/ day of December, 2014 by Kay Havenor.

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My Commission Expires:

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7,250	20. BLM/BIA Bond Na on file NMB000612
22. Approximate date work will star 11/7/14	rt* 23. Estimated duration 15 DAYS
24. Attachments	
	sation specific information and/or plans as may be required by the
Name (PrintedTyped) RILEY G NEATHERLIN	Data 11/10/14
Name (Printed/Typed)	Date
Office	10/19
ds legal or equitable title to those right	ts in the subject lease which would entitle the applicant to
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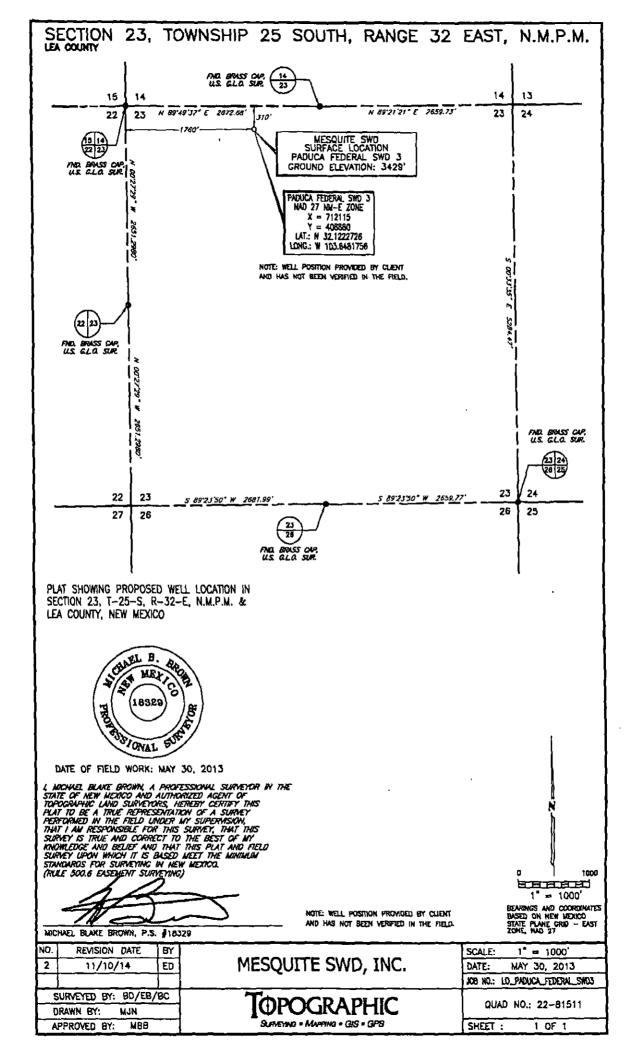
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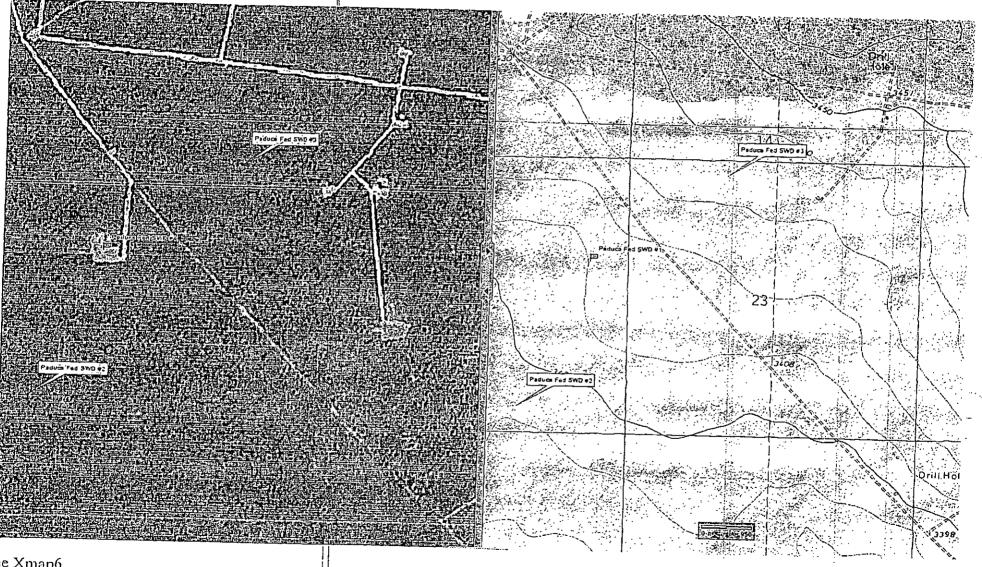
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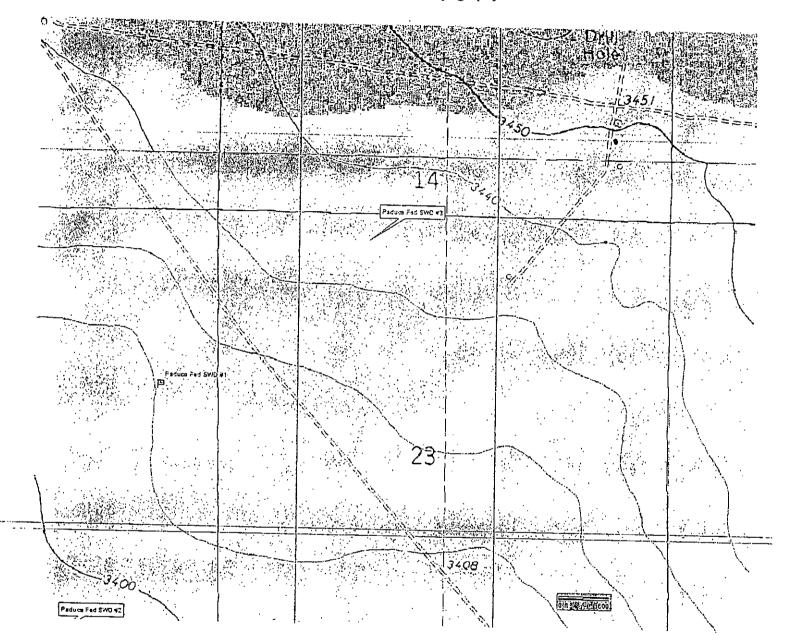
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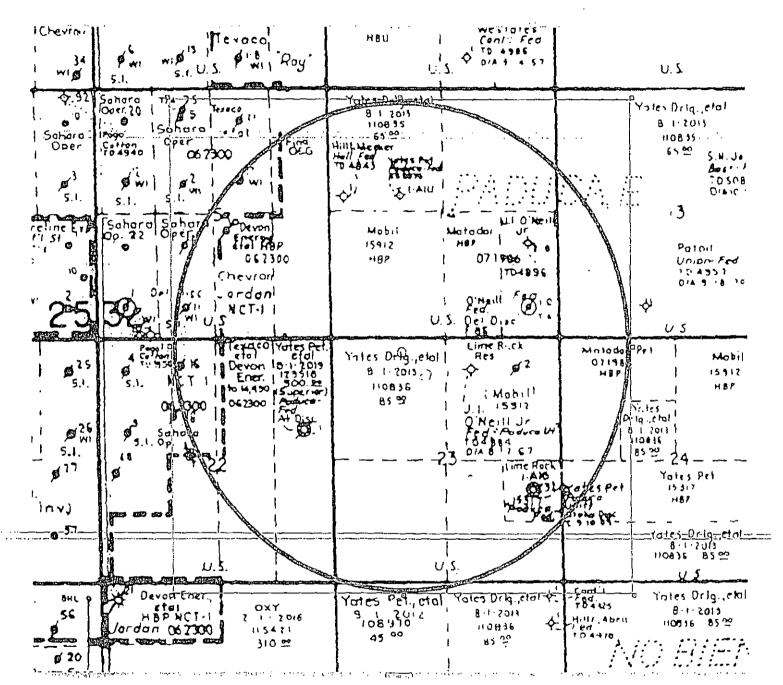
Paduca Federal SWD #3 will be located 575 miles south of NM-128 and CR-1 (Orla Road) junction then 1.4 miles southeast.

Surface Topography



Surface topography Delorme XMap6

1-Mile AOR



# Mesquite SWD, Inc. <u>DRILLING PROGRAM</u>

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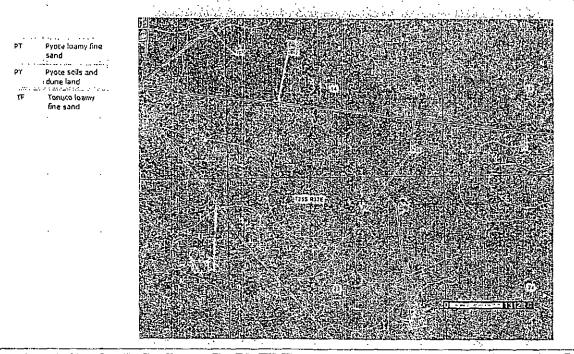
## Paduca Federal #3, 300' FNL & 1760' FWL Sec: 23, T25S-R32E; Lea Co., NM

Supplemental to Form 3160-3, Application for Permit to drill the subject well, Mesquite SWD, Inc submits the following information as per Bureau of Land Management requirements.

## 1. Geologic Name of Surface Formation

Surface is Quaternary eolian and piedmont deposits (Qep) Holocene to middle Pleistocene. (New Mexico Bureau of Geology and Mineral Resources, 2003, Geologic Map of New Mexico, 1:500,000)

Soil map with legend. Source: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx



## 2. Formation Tops and Estimated Fresh Water:

The of geologic markers and estimated depths at which anticipated water, oil or gas formations are expected to be encountered as follows:

B/Alluvium	85'	Estimated potable water, if present, approx 80'.
Rustler	750'	
Top Salado	1,100'	
Main salt	2,320'	
Base salt	4,500'	
Lamar limestone	4,750'	
Bell Canyon	4,820'	No oil or gas expected below (Ramsey/Olds) 4,850'
Cherry Canyon	6,250'	
Brushy Canyon	7,360'	Estimated

#### 3. Estimated Depths of Anticipated Fresh Water, Oil or Gas.

None of the formations above the Brushy Canyon have been found to be commercially productive of oil or gas east of the present Paduca field, or are depleted, in the disposal interval of this well. No fresh water wells are reported in the NM OCD 2-mile area of review, none would be expected beneath the Alluvium. Potential shallow water will be protected by 9-5/8" casing set at 865' and cement circulated to the surface.

#### 4. Casing:

Design Parameter I	Factors:			
Casing Size	<u>Collapse Design</u>	Burst Design	Tesnion Design	Setting
	Factor	Factor	Factor	Depth
20"	5.55	22.5	7.46	20'
13-3⁄8" 48# H-40 ST	°C 1.647	3.85	7.76	865'
9-5⁄8" 36# J-55 LTC	1.175	1.44	2.64	3000'
9-%" 40# J-55 LTC	1.194	1.16	8.67	4200'
9-%" 40# N-80 LTC	1.266	2.36	30.71	4550 4700
7" 23# J-55 <u>,</u> LTC	1.153	1.16	1.83	5200'
7" 26# J-55 LTC	1.147	1.32	2.12	7250'

## Selfor

Hole Size	Casing	Depth Set Cement		Top Cement
26"	20" Conductor	20'	144 ft <sup>3</sup>	Surface
17-1⁄2"	13-¾" 48# H-40	865'	840 sx	Circulated
12-1/4"	9-⁵⁄a" 36/40# J-55/N-80	4.550 470	O 2138 sx	Circulated
8-5%"	7" 23/26# J-55	7,250'	475 sx	~4,100'
All new or	White Band (used certified to A	API standards).		5164

#### Auxiliary Well Control and Monitoring Equipment: 4-A.

a------A-Kelly cock-will be in the drill string at all times------

A full opening drill pipe stabbing valve having the appropriate connections weill be on the rig floor Ь. at all times.

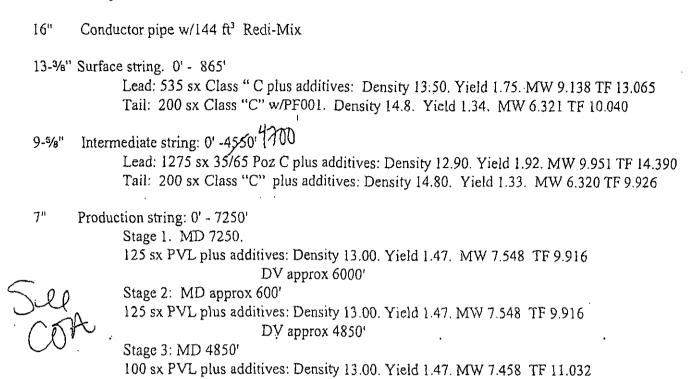


Hydrogen Sulfide detection equipment will be in operation after drilling out the 95%" casing shoe until the 7" casing is cemented. Breathing equipment will be on location upon drilling the 95%" shoe until total depth is reached.

Ifproblems, please call Clay Wilson @ 575-706-1940

#### Cement Program:

5.



Cement volumes calculated using 100% excess over open hole volume.

#### 6. Proposed Mud Circulation System:

Drilling and returned circulation will be from and to a closed loop-like system w/surface tanks. No earthen mud or reserves pits will be constructed or used for this well. Drilling fluids and cuttings, if any, will be trucked to a certified disposal facility upon completion of drilling operations. Cement cuttings will be removed to a certified disposal facility.

Depth	Mud Wt.	Viscosity	Fluid Loss	Type Mud	
 0 - 865'	8.4 - 8.5	29	NC	Fresh water	}
865'-4,700'	9.9-10.0	29	NC	Brine	}
4,700'-7,250'	9.0	29	NC	Cut Brine/Fresh water	

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Manifold schematic with routing to closed loop system is illustrated in Exhibit 2, below.

visual mud monitoring

## Pressure Control Equipment:

.7.

BOP system, Exhibit 1 below, used to drill the intermediate hole will consist of a double ram-type (3M) preventer and annular preventer. Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. BOP will be tested in accordance with Onshore Oil & Gas order No. 2 as a 3M system prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a double ram-type (3M) preventer and annular preventer. BOP will be tested in accordance with Onshore Oil & Gas order No. 2 as a 3M system prior to drilling out the intermediate casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily drillers log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Vent line will extend to pad margin to provide sufficient distance, approximately 150' to flare boom, from any ignition source in the event natural gas should be encountered. No gas has been reported to this depth in the drilling of adjacent holes.

#### 8. Estimated BHP:

At proposed TD 7,250' estimated BHP will be 3,295 psi.

### 9. Potential Hazards:

No abnormal pressures or temperatures were reported in the nearby drilling operations.  $H_2S$  detection equipment will be in operation during the drilling operation.  $H_2S$  is not considered a potential hazard because it was not reported in the surrounding area. See  $H_2S$  schematic Exhibit 3, below.

## 10. Anticipated Starting Date and Duration of Operations:

-Road-and-location-construction-will-begin-as-soon-as-the-BLM approves this APD. Move-in and drilling will follow as soon thereafter as rig and equipment are available. Drilling, well preparation for injection and lease clean-up are expected to require approximately 15 days.

## 11. Logging, Coring, and Testing Program:

No coring or formation testing is anticipated. A gamma-ray-neutron/density log will be run from TD to surface. A formation logger and gas detector may be employed.

#### Addendum: Non-productive zones

Wells up-dip (west), east of the drill site acreage and in the surrounding area have tested, completed in and/or depleted the upper Ramsey and the upper Olds of the Bell Canyon in the AOR. Numerous deeper wells have drilled, evaluated and/or tested the Ramsey/upper Olds. The lower Olds and the underlying Bell Canyon and Cherry Canyon in the greater area have not demonstrated production or commercial potential. This new-drill SWD will isolate the Ramsey/upper Olds and the underlying Brushy Canyon Formation where some hydrocarbon potential might present an exploration target for horizontal drilling.

Addendum: Non-productive zones

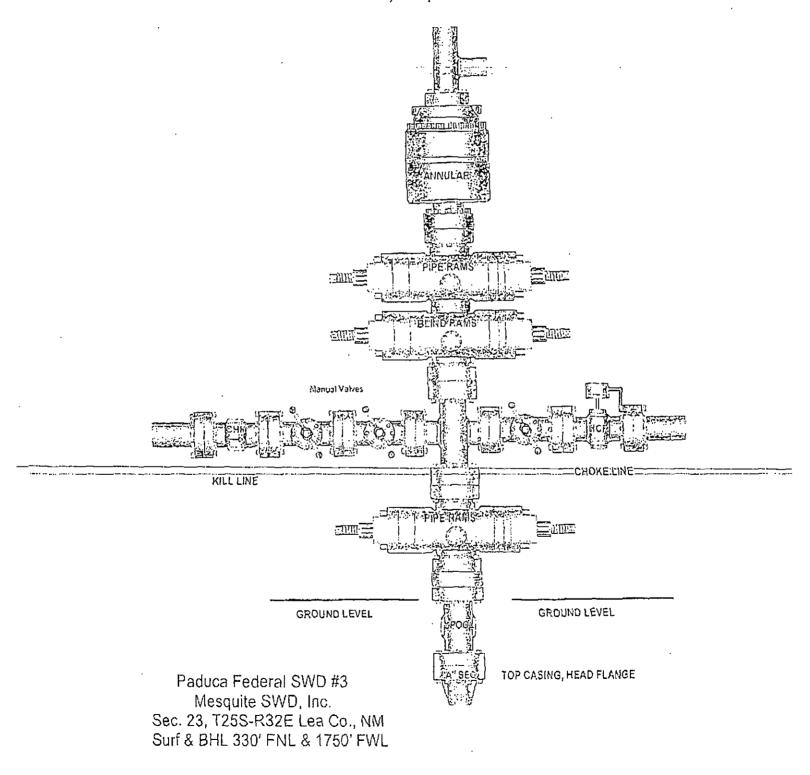
See COM

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5

Exhibit 1

13-5/8" x 3,000 psi BOP Stack



11

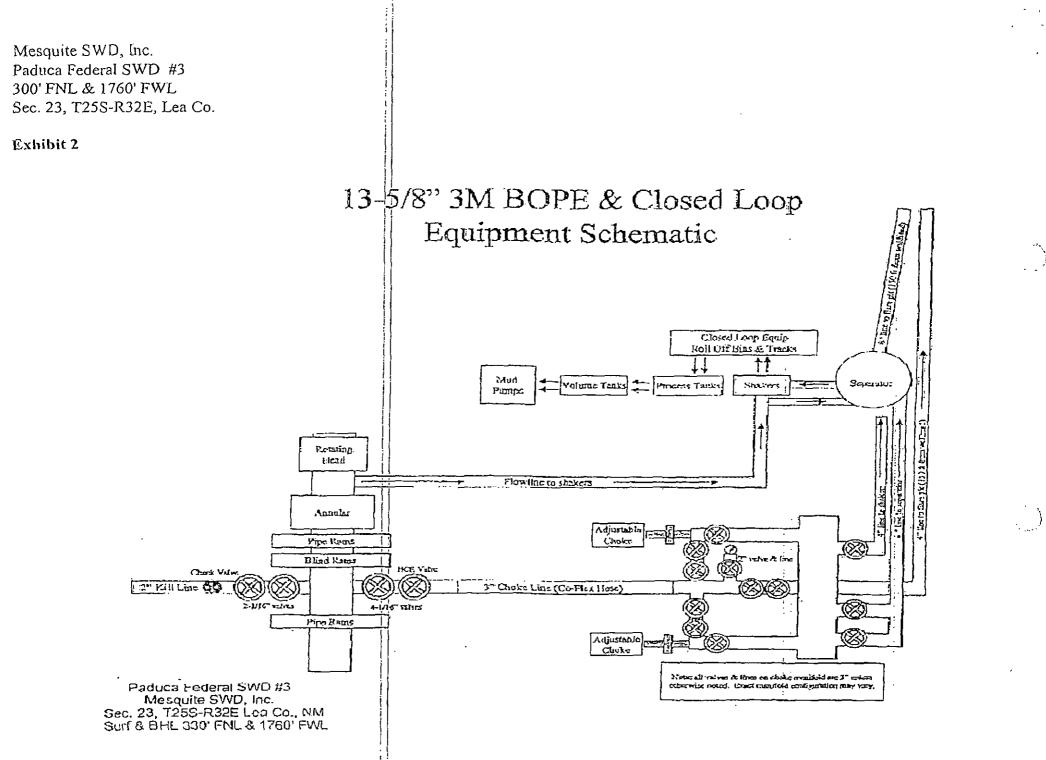
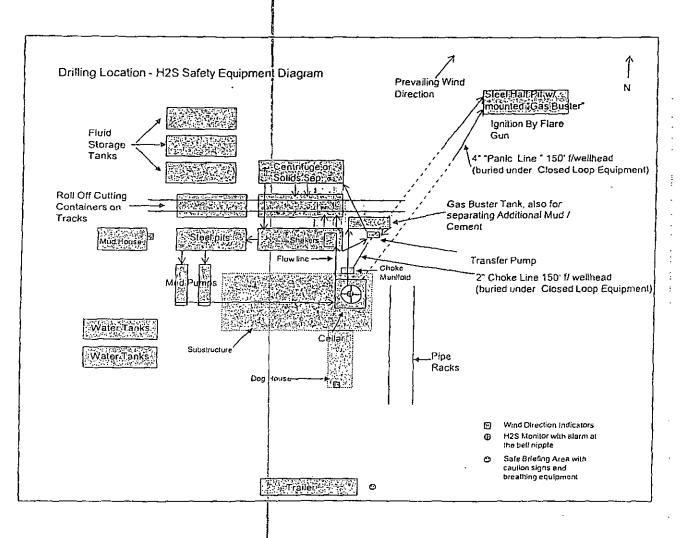


Exhibit 3 Generalized Pad Layout, Closed-Loop Routing and H<sub>2</sub>S Safety Layout



Also see Exhibit 4, page 18 for detailed H<sub>2</sub>S Location Layout

	UNITED STATE PARTMENT OF THE REAU OF LAND MAN	INTERIOR	OCD Hobbs	FORM APPROVED OMB No. 1004-0137 Expires: October 31, 2014 5. Lease Serial No. SWD R-13735 NM 110836
Do not use this	NOTICES AND REPO form for proposals Use Form 3160-3 (A	to drill or to re-e	nter an	6. If Indian, Allottee or Tribe Name
SUBI	MIT IN TRIPLICATE Other	r instructions on page		7. If Unit of CA/Agreement, Name and/or No.
I. Type of Well	Well 🖌 Other Si	ND //	NOV 17 2014	PADUCA SWD #3 🗸
2. Name of Operator MES			RECEIVED	9. API Well No. 30-025-42258
3a, Address PO BOX 1479 CARLSBAD NM, 88221		3b. Phone No. (inclu (575) 706-7288 (FC	•	10. Field and Pool or Exploratory Area SWD, DELAWARE BELL & CHERRY CANYON
4. Location of Well (Footage, Sec., SEC 23, T25S-R32E 200 Fl	I.R.M., or Survey Description			11. County or Parish, State LEA
12. CF	ECK THE APPROPRIATE B	OX(ES) TO INDICAT	E NATURE OF NOTIC	CE, REPORT OR OTHER DATA
TYPE OF SUBMISSION			TYPE OF ACT	TON
Notice of Intent	Acidize	Deepen Fracture Tre	·	amation (Start/Resume) Water Shut-Off Well Integrity
Subsequent Report	Casing Repair	New Constr		porarily Abandon
Final Abandonment Notice	Convert to Injection	Plug Back	Wate	er Disposal
the proposal is to deepen direct Attach the Bond under which the following completion of the inv	onally or recomplete horizonta e work will be performed or pro- olved operations. If the operational Abandonment Notices must for final inspection.)	ally, give subsurface loo rovide the Bond No. or tion results in a multiple t be filed only after all a	cations and measured a 1 file with BLM/BIA. 1 e completion or recomp requirements, including	ate of any proposed work and approximate duration thereof. If nd true vertical depths of all pertinent markers and zones. Required subsequent reports must be filed within 30 days pletion in a new interval, a Form 3160-4 must be filed once g reclamation, have been completed and the operator has

B	
Attachment	

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. ....

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)	
RILEY G NEATHERLIN	Title PRODUCTION FOREMAN
Signature poc kitht	Date 11/10/14 ACCEPTED FOR RECORD
THIS SPACE FOR FED	ERAL OR STATE OFFICE USE 1 0014 MATT
Approved by	File 3 / Comment All Ant
Conditions of approval, if any, are attached. Approval of this notice does not warrant or that the applicant holds legal or equitable title to those rights in the subject lease which entitle the applicant to conduct operations thereon.	
Tide 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any fictitious or fraudulent statements or representations as to any matter within its jurisdict	person knowingly and willfully to make to any department or agency of the United States any false,

(Instructions on page 2)

Form 315035 • (March 2012) DEP	UNITED STATES ARTMENT OF THE INTERIOR	00	BBS O	S	FORM APP OMB No. 1	004-0137
	EAU OF LAND MANAGEMEN		V 1	AND R-13735 NM	Expires: Octo 1 110836	
Do not use this fo	OTICES AND REPORTS ON form for proposals to drill or t Jse Form 3160-3 (APD) for su	to re-enter an	RECEN	f Indian, Allottee		me
	IN TRIPLICATE - Other instructions		7.1	f Unit of CA/Ag	reement, Nar	ne and/or No.
1. Type of Well				Vell Name and N		
2. Name of Operator					PADUC.	A SWD #3
3a. Address	ITE SWD INC	0. (include area code)		Field and Pool o	<u> </u>	25-42258
PO BOX 1479 CARLSBAD NM, 88221		288 (FOREMAN)				HERRY CANYON
4. Location of Well (Footage, Sec., T., I SEC 23, T25S-R32E	2.,M., or Survey Description)			County or Parisl A	n, State	
I2. CHEC	K THE APPROPRIATE BOX(ES) TO IN	DICATE NATURE OF	NOTICE, I	REPORT OR OT	HER DATA	· · · · · · · · · · · · · · · · · · ·
TYPE OF SUBMISSION		TYPE OF	F ACTION	I		
Notice of Intent		epen	Productio	on (Start/Resume) ion	កាំ»	ater Shut-Off ell Integrity
Subsequent Report		w Construction	Recompl		0 🖸	ther SKID AIG
Final Abandonment Notice		ig and Abandon	Water Di	rily Abandon sposal		
determined that the site is ready fo INTEND TO SKID THE RIG 10' TO	THE SOUTH, SET NEW 20" CONDUC		and	8 2K.01	00	11/3/14
	Attachment		SF C	E ATTA ONDITIC	CHED DNS O	FOR F APPROVAL
14. ) hereby certify that the foregoing is t	rue and correct. Name (Printed/Typed)					
RILEY G NEATHERLIN		Title PRODUCTIC		MAN	PPE	DIAA
Signature SG /	ATTO	Date 11/10/14		ARCHOR		
0	THIS SPACE FOR FEE	DERAL OR STATE	E OFFIC	EUSEX		THEREAD
that the applicant holds legal or equitable entitle the applicant to conduct operations Title 18 U.S.C. Section 1001 and Title 43	A STephen Astri d. Approval of this notice does not warrant title to those rights in the subject lease which thereon. U.S.C. Section 1212, make it a crime for an resentations as to any matter within its jurisdi	would Office	Illfully to n	BUREAU (		ANAGEMENT System Environ States any false,
(Instructions on page 2)						